



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-1185; Project Identifier AD-2021-00339-E; Amendment 39-22040; AD 2022-10-02]

RIN 2120-AA64

Airworthiness Directives; Honeywell International, Inc. (Type Certificate previously held by AlliedSignal, Inc. and Textron Lycoming) Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2002-03-01, which applied to certain Honeywell International, Inc. (Honeywell) T53 model turboshaft engines. AD 2002-03-01 required initial and repetitive special vibration tests of the engine and, if necessary, replacement with a serviceable reduction gearbox assembly, or a serviceable engine before further flight. This AD was prompted by reports of tachometer drive spur gear failure, resulting in potential engine overspeed, loss of power turbine speed (N2) instrument panel indication, and hard landings. This AD requires initial and repetitive special vibration tests of the engine and, depending on the results, replacement of either the reduction gearbox assembly or the engine. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of March 21, 2002 (67 FR 6857, February 14, 2002).

ADDRESSES: For service information identified in this final rule, contact Honeywell International, Inc., 111 South 34th Street, Phoenix, AZ 85034; phone: (800) 601-3099; fax: (602) 365 5577; website: <https://myaerospace.honeywell.com/wps/portal>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1185.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1185; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Jeffrey Chang, Aviation Safety Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712; phone: (562) 627-5263; fax: (562) 627-5210; email: jeffrey.chang@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2002-03-01, Amendment 39-12642 (67 FR 6857, February 14, 2002), (AD 2002-03-01). AD 2002-03-01 applied to Honeywell (formerly AlliedSignal, Inc. and Textron Lycoming) T5311A, T5311B, T5313B, T5317A, T5317B, and former military T53-L-11, T53-L-11A, T53-L-11B, T53-L-11C, T53-L-11D, T53-L-11A S/SA, T53-L-13B, T53-L-13B S/SA, T53-L-13B S/SB, and T53-L-703 model turboshaft engines. The NPRM published in the *Federal Register* on January 24, 2022 (87 FR 3470). The NPRM was prompted by reports indicating that Honeywell T5317A-1 and T5317BCV model turboshaft engines are subject to the same unsafe condition identified

in AD 2002-03-01, tachometer drive spur gear failures due to vibration loads. These model turboshaft engines were not included in the applicability of AD 2002-03-01. The FAA and Honeywell determined that the Honeywell T5317A-1 engine model was inadvertently left out of the applicability of AD 2002-03-01 and the Honeywell T5317BCV engine model was introduced into production after the publication of AD 2002-03-01. In the NPRM, the FAA proposed to continue to require initial and repetitive special vibration tests of the engine and, depending on the results, replacement of either the reduction gearbox assembly or the engine. In the NPRM, the FAA also proposed to expand the applicability to include Honeywell T5317A-1 and T5317BCV model turboshaft engines.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from an individual commenter. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Withdraw the NPRM

An individual commenter commented that both the NPRM and the AD being superseded [AD 2002-03-01] are redundant based on the service bulletins Honeywell published addressing the unsafe condition. The commenter suggested that if a new AD is published, the AD should include language allowing operators already in compliance to remain in compliance until the next due time. The commenter added that the changes in the NPRM seem more appropriate for an AD revision than that of publishing a new AD since the reference material and unsafe condition remain unchanged. Additionally, the commenter suggested that the justification for the NPRM, based on the introduction of Honeywell T5317A-1 and T5317BCV model turboshaft engines, is inaccurate as both series are already included in the Honeywell service bulletins.

The FAA disagrees with withdrawing the NPRM. Issuance of this AD is necessary in order to mandate the required actions on the affected engines to address the unsafe condition. Service information incorporated by reference under 1 CFR part 51 in AD 2002-03-01 is also incorporated by reference in this AD. The required actions for certain engine models continue to be required by this AD. As a result, operators who

accomplished the required actions in AD 2002-03-01 before the effective date of this AD, are in compliance with paragraph (g)(1) of this AD based on paragraph (f) Compliance, which requires operators to comply with this AD within the compliance times specified, unless already done. Therefore, for operators that already complied with paragraph (g)(1) of this AD prior to the effective date, the next repetitive special vibration test of the engine must be accomplished before exceeding the specified flight hours in paragraph (g)(2) of this AD. Since the effective date of AD 2002-03-01, Honeywell published Honeywell Service Bulletin (SB) T53-0147, dated May 29, 2007, and Honeywell Maintenance Manual Temporary Revision (TR) No. 165, dated July 29, 2020, which specify procedures for performing the initial and repetitive special vibration tests on Honeywell T5317A-1 and T5317BCV model turboshaft engines. Regarding the request to revise AD 2002-03-01 instead of issuing this superseding AD, the method to revise AD 2002-03-01 is through superseding it, which this AD does.

Revision to the Required Actions

Since the NPRM published, the FAA determined the need to remove the Definitions paragraph from this AD and instead, revise the required actions in paragraph (g)(1) of this AD. In the NPRM, the FAA proposed to define a “reduction gearbox assembly eligible for installation” as a new, zero hour reduction gearbox assembly or an overhauled reduction gearbox assembly with tachometer drive spur gear P/N 1-070-062-04 or P/N 1-070-062-06 that does not exceed the 0.2 IPS limit for any peak within the RPM/frequency bands during the administered special vibration test. In the NPRM, the FAA also proposed to define an “engine eligible for installation” as an engine with tachometer drive spur gear P/N 1-070-062-04 or P/N 1-070-062-06 that does not exceed the 0.2 IPS limit for any peak within the RPM/frequency bands during the administered special vibration test. Both of these proposed definitions would have required operators to first perform a special vibration test on the engine or reduction gearbox assembly before further flight after installation. In lieu of these definitions, the FAA revised paragraph (g)(1) of this AD to require a special vibration test before further flight for a newly installed engine or newly installed reduction gearbox assembly. The FAA also

revised the proposed action in paragraph (g)(3) by removing reference to those previously defined terms in the proposal and removing the proposed actions in paragraphs (g)(4) and (5) of the NPRM.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information under 1 CFR Part 51

The FAA reviewed AlliedSignal, Inc. SB T5311A/B-0100, dated January 20, 2000. This SB specifies procedures for performing a special vibration check on Honeywell T5311A and T5311B model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T5313B/17-0100, dated November 19, 1999. This SB specifies procedures for performing a special vibration check on Honeywell T5313B, T5317A, and T5317B model turboshaft engines.

The FAA reviewed Honeywell SB T53-0147, dated May 29, 2007. This SB specifies procedures for performing a special vibration check on Honeywell T5317A-1 model turboshaft engines.

The FAA reviewed Honeywell Maintenance Manual TR No. 165, dated July 29, 2020. This TR specifies procedures for performing a special vibration check on Honeywell T5313B, T5317A, T5317A-1, T5317B, and T5317BCV model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T53-L-11-0100, Revision 2, dated January 20, 2000. This SB specifies procedures for performing a special vibration check on Honeywell T53-L-11, -11A, -11B, -11C, -11D, and -11A S/SA model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T53-L-13B-0100, Revision 2, dated May 11, 1999. This SB specifies procedures for performing a special vibration check on Honeywell T53-L-13B, -13B S/SA, and -13B S/SB model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T53-L-703-0100, Revision 2, dated May 11, 1999. This SB specifies procedures for performing a special vibration check on Honeywell T53-L-703 model turboshaft engines.

The Director of the Federal Register approved AlliedSignal, Inc. SB T5313B/17-0100, dated November 19, 1999; AlliedSignal, Inc. SB T53-L-13B-0100, Revision 2, dated May 11, 1999; AlliedSignal, Inc. SB T53-L-703-0100, Revision 2, dated May 11, 1999; AlliedSignal, Inc. SB T5311A/B-0100, dated January 20, 2000; and AlliedSignal, Inc. SB T53-L-11-0100, Revision 2, dated January 20, 2000, for incorporation by reference as of March 21, 2002 (67 FR 6857, February 14, 2002). This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed AlliedSignal, Inc. SB T5311/T53-L-11-0103, dated January 20, 2000. This SB specifies procedures for replacing the reduction gearbox assembly on Honeywell T5311A and T5311B model turboshaft engines and Honeywell T53-L-11, -11A, -11B, -11C, -11D, and -11A S/SA model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T5313B/17-0103, dated November 19, 1999. This SB specifies procedures for replacing the reduction gearbox assembly on Honeywell T5313B, T5317A, and T5317B model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T53-L-13B-0103, Revision 4, dated November 2, 1999. This SB specifies procedures for replacing the reduction gearbox assembly on Honeywell T53-L-13B, -13B S/SA, and -13B S/SB model turboshaft engines.

The FAA reviewed AlliedSignal, Inc. SB T53-L-703-0103, Revision 4, dated November 2, 1999. This SB specifies procedures for replacing the reduction gearbox assembly on Honeywell T53-L-703 model turboshaft engines.

Costs of Compliance

The FAA estimates that this AD affects 150 engines installed on helicopters of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Special vibration test of the engine	4 work-hours x \$85 per hour = \$340	\$0	\$340	\$51,000

The FAA estimates the following costs to do any necessary replacement that would be required based on the results of the special vibration test. The agency has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the reduction gearbox assembly	40 work-hours x \$85 per hour = \$3,400	\$48,000	\$51,400
Replace the engine	24 work-hours x \$85 per hour = \$2,040	\$250,577	\$252,617

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive 2002-03-01, Amendment 39-12642 (67 FR 6857, February 14, 2002); and

- b. Adding the following new airworthiness directive:

2022-10-02 Honeywell International Inc. (Type Certificate previously held by AlliedSignal, Inc. and Textron Lycoming): Amendment 39-22040; Docket No. FAA-2021-1185; Project Identifier AD-2021-00339-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2002-03-01, Amendment 39-12642 (67 FR 6857, February 14, 2002).

(c) Applicability

This AD applies to Honeywell International, Inc. (Type Certificate previously held by AlliedSignal, Inc. and Textron Lycoming) T5311A, T5311B, T5313B, T5317A, T5317A-1, T5317B, T5317BCV, and former military T53-L-11, T53-L-11A, T53-L-11B, T53-L-11C, T53-L-11D, T53-L-11A S/SA, T53-L-13B, T53-L-13B S/SA, T53-L-13B S/SB, and T53-L-703 model turboshaft engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7600, Engine Controls.

(e) Unsafe Condition

This AD was prompted by reports of tachometer drive spur gear failure, resulting in potential engine overspeed, loss of power turbine speed (N2) instrument panel indication, and hard landings. The FAA is issuing this AD to prevent excessive vibrations produced by the reduction gearbox assembly that could cause failure of the tachometer drive spur gear. The unsafe condition, if not addressed, could result in failure of the engine, loss of thrust control, and damage to the aircraft.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 100 flight hours (FHs) after the effective date of this AD, or before further flight for a newly installed engine or newly installed reduction gearbox assembly, perform an initial special vibration test of the engine using the service information, as applicable to the engine model, listed in Table 1 to paragraph (g)(1) of this AD.

Table 1 to paragraph (g)(1) –Applicable Service Information

Engine Model	Service Information
Honeywell T5311A and T5311B	Accomplishment Instructions, paragraph 3.A. of AlliedSignal, Inc. Service Bulletin (SB) T5311A/B-0100, dated January 20, 2000.

Engine Model	Service Information
Honeywell T5313B, T5317A, and T5317B	Accomplishment Instructions, paragraph 3.A. AlliedSignal, Inc. SB T5313B/17-0100, dated November 19, 1999, or paragraph 11.F of Honeywell Maintenance Manual Temporary Revision (TR) No. 165, dated July 29, 2020.
Honeywell T5317A-1	Accomplishment Instructions, paragraph 3.A. of Honeywell SB T53-0147, dated May 29, 2007, or paragraph 11.F of Honeywell Maintenance Manual TR No. 165, dated July 29, 2020.
Honeywell T5317BCV	Paragraph 11.F of Honeywell Maintenance Manual TR No. 165, dated July 29, 2020.
Honeywell T53-L-11, -11A, -11B, -11C, -11D, and -11A S/SA	Accomplishment Instructions, paragraph 3.A. of AlliedSignal, Inc. SB T53-L-11-0100, Revision 2, dated January 20, 2000.
Honeywell T53-L-13B, -13B S/SA, and -13B S/SB	Accomplishment Instructions, paragraph 3.A. of AlliedSignal, Inc. SB T53-L-13B-0100, Revision 2, dated May 11, 1999.
Honeywell T53-L-703	Accomplishment Instructions, paragraph 3.A. of AlliedSignal, Inc. SB T53-L-703-0100, Revision 2, dated May 11, 1999.

(2) Thereafter, within the following compliance times, perform repetitive special vibration tests of the engine:

(i) For engines that have tachometer drive spur gear part number (P/N) 1-070-062-04 installed, perform a repetitive special vibration test before exceeding 500 FHs since the last special vibration test.

(ii) For engines that have tachometer drive spur gear P/N 1-070-062-06 installed, perform a repetitive special vibration test before exceeding 1,000 FHs since the last special vibration test.

(3) If, during any special vibration test required by paragraph (g)(1) or (2) of this AD, an engine exceeds the 0.2 inches per second (IPS) limit for any peak RPM/frequency bands, before further flight, remove the reduction gearbox assembly or the engine from service.

(h) No Reporting Requirement

The reporting requirements in the Accomplishment Instructions, paragraph 3.A. or paragraph 11.F, of the service information, as applicable to the engine model, listed in Table 1 to paragraph (g)(1) of this AD, are not required by this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) AMOCs approved for AD 2002-03-01 (67 FR 6857, February 14, 2002) are approved as AMOCs for the corresponding provisions of this AD.

(j) Related Information

For more information about this AD, contact Jeffrey Chang, Aviation Safety Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712; phone: (562) 627-5263; fax: (562) 627-5210; email: jeffrey.chang@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(i) Honeywell Service Bulletin (SB) T53-0147, dated May 29, 2007.

(ii) Honeywell Maintenance Manual Temporary Revision No. 165, dated July 29, 2020.

(4) The following service information was approved for IBR on March 21, 2002 (67 FR 6857, February 14, 2002).

(i) AlliedSignal, Inc. SB T5311A/B-0100, dated January 20, 2000.

(ii) AlliedSignal, Inc. SB T5313B/17-0100, dated November 19, 1999.

(iii) AlliedSignal, Inc. SB T53-L-11-0100, Revision 2, dated January 20, 2000.

(iv) AlliedSignal, Inc. SB T53-L-13B-0100, Revision 2, dated May 11, 1999.

(v) AlliedSignal, Inc. SB T53-L-703-0100, Revision 2, dated May 11, 1999.

(5) For service information identified in this AD, contact Honeywell International, Inc., 111 South 34th Street, Phoenix, AZ 85034; phone: (800) 601-3099; fax: (602) 365 5577; website: <https://myaerospace.honeywell.com/wps/portal>.

(6) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 5, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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